STIC Search Report
Biotech-Chem Library

STIC Database Tracking Number: 140583

TO:	FROM:
Sarvamangala Devi Location: rem/3c18 Art Unit: 1645 Wednesday, December 22, 2004 Case Serial Number: 10/070882	Paul Schulwitz Location: Biotech-Chem Library REM-1A65 Phone: (571)272-2527 paul.schulwitz@uspto.gov

Search Notes

Examiner Devi,

See attached results.

If you have any questions about this search feel free to contact me at any time.

Thank you for using STIC search services!

Paul Schulwitz
Technical Information Specialist
STIC Biotech/Chem Library
(571)272-2527

STIC-Biotech/ChemLib 140583

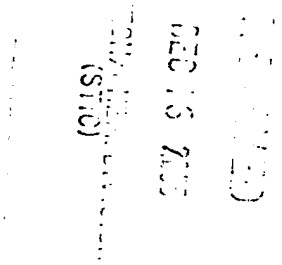
From: Devi, Sarvamangala
Sent: Thursday, December 16, 2004 11:22 AM
To: STIC-Biotech/ChemLib
Subject: 10/070,882

In application SN 10/070,882, please perform a sequence search for SEQ ID NO: 2 in commercial and interference databases. Please provide a paper copy of the first thirty hits.

Please include an inventors' name search for: William Richard Titball and Lisa Helen Bullifent.

Thanx.

S. DEVI, Ph.D.
Primary Examiner
AU 1645
Rems - 3C18



****
STAFF USE ONLY

Searcher:_____
Searcher Phone: 2-
Date Searcher Picked up:____
Date Completed: 12/22
Searcher Prep/Rev. Time:___
Online Time:_____

****
Type of Search
NA Sequence: #_____
AA Sequence :#_____
Structure: #_____
Bibliographic:_____
Litigation:_____
Patent Family:_____
Other:_____

****
Vendors and cost where applicable
STN:_____
DIALOG:_____
QUESTEL/ORBIT:_____
LEXIS/NEXIS:_____
SEQUENCE SYSTEM:_____
WWW/Internet:_____
Other(Specify):_____

L4 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 1
AN 2002:51646 HCAPLUS
DN 136:101094
TI Use of domains of the protective antigen of Bacillus anthracis in vaccines
IN Williamson, Ethel Diane; Miller, Julie; Walker, Nicola Jane; Baillie, Leslie William James; Holden, Paula Thomson; Flick-Smith, Helen Claire; **Bullifent, Helen Lisa; Titball, Richard William;** Topping, Andrew William
PA The Secretary of State for Defence, UK
SO PCT Int. Appl., 40 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002004646	A1	20020117	WO 2001-GB3065	20010706
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2413045	AA	20020117	CA 2001-2413045	20010706
	EP 1301606	A1	20030416	EP 2001-947659	20010706
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2004502460	T2	20040129	JP 2002-509500	20010706
	ZA 2002010206	A	20040317	ZA 2002-10206	20021217
	US 2003170263	A1	20030911	US 2003-332282	20030411
PRAI	GB 2000-16702	A	20000708		
	WO 2001-GB3065	W	20010706		

AB An immunogenic reagent which produces an immune response which is protective against Bacillus anthracis is described for use in vaccines. This reagent comprising one or more polypeptides which together represent up to three domains of the full length Protective Antigen (PA) of B . anthracis or its variants. At least one of said domains comprises domain 1 or domain 4 of PA or a variant thereof which produce the greatest protective immunity. The polypeptides of the immunogenic reagent as well as full length PA are produced by expression from E. coli. A method of producing the said protective antigen or a variant thereof which can produce a protective immune response where the the percentage of guanine and cytosine residues in the gene sequence is greater than 35% or preferably between 50-52%. High yields of polypeptide are obtained using this method. Cells, vectors and nucleic acids used in the method are also described and claimed.
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 2
AN 2002:312250 HCAPLUS
DN 136:320644
TI The First Strain of Clostridium perfringens Isolated from an Avian Source

Has an Alpha-Toxin with Divergent Structural and Kinetic Properties

AU Justin, Neil; Walker, Nicola; **Bullifent, Helen L.**; Songer, Glenn; Bueschel, Dawn M.; Jost, Helen; Naylor, Claire; Miller, Julie; Moss, David S.; **Titball, Richard W.**; Basak, Ajit K.

CS School of Crystallography, Birkbeck College, London, WC1E 7HX, UK

SO Biochemistry (2002), 41(20), 6253-6262
CODEN: BICHAW; ISSN: 0006-2960
PB American Chemical Society
DT Journal
LA English

AB Clostridium perfringens alpha-toxin is a 370-residue, zinc-dependent, phospholipase C that is the key virulence determinant in gas gangrene. It is also implicated in the pathogenesis of sudden death syndrome in young animals and necrotic enteritis in chickens. Previously characterized alpha-toxins from different strains of C. perfringens are almost identical in sequence and biochem. properties. We describe the cloning, nucleotide sequencing, expression, characterization, and crystal structure of alpha-toxin from an avian strain, SWan C. perfringens (SWCP), which has a large degree of sequence variation and altered substrate specificity compared to these strains. The structure of alpha-toxin from strain CER89L43 has been previously reported in open (active site accessible to substrate) and closed (active site obscured by loop movements) conformations. The SWCP structure is in an open-form conformation, with three zinc ions in the active site. This is the first example of an open form of alpha-toxin crystallizing without the addition of divalent cations to the crystallization buffer, indicating that the protein can retain three zinc ions bound in the active site. The topol. of the calcium binding site formed by residues 269, 271, 336, and 337, which is essential for membrane binding, is significantly altered in comparison with both the open and closed alpha-toxin structures. We are able to relate these structural changes to the different substrate specificity and membrane binding properties of this divergent alpha-toxin. This will provide essential information when developing an effective vaccine that will protect against C. perfringens infection in a wide range of domestic livestock.

RE.CNT 52 THERE ARE 52 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 3

AN 2002:150667 HCAPLUS
DN 136:293157

TI A recombinant carboxy-terminal domain of the protective antigen of Bacillus anthracis protects mice against anthrax infection

AU Flick-Smith, Helen C.; Walker, Nicola J.; Gibson, Paula; **Bullifent, Helen**; Hayward, Sarah; Miller, Julie; **Titball, Richard W.**; Williamson, E. Diane

CS Dstl, Chemical and Biological Sciences, Salisbury, SP4 0JQ, UK

SO Infection and Immunity (2002), 70(3), 1653-1656
CODEN: INFIBR; ISSN: 0019-9567
PB American Society for Microbiology
DT Journal
LA English

AB The immunogenicity and protective efficacy of overlapping regions of the protective antigen (PA) polypeptide, cloned and expressed as glutathione S-transferase fusion proteins, have been assessed. Results show that protection can be attributed to individual domains and imply that it is domain 4 which contains the dominant protective epitopes of PA.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 4
AN 2002:438565 HCAPLUS
DN 137:291538
TI Role of trehalose biosynthesis in environmental survival and virulence of Salmonella enterica serovar typhimurium
AU Howells, Angela M.; **Bullifent, Helen L.**; Dhaliwal, Kam; Griffin, Kate; Garcia de Castro, Arcadio; Frith, Graeme; Tunnacliffe, Alan; **Titball, Richard W.**
CS Defence Science and Technology Laboratory, Salisbury, SP4 0JQ, UK
SO Research in Microbiology (2002), 153(5), 281-287
CODEN: RMCREW; ISSN: 0923-2508
PB Editions Scientifiques et Medicales Elsevier
DT Journal
LA English
AB The otsA and otsB genes, encoding trehalose-6-phosphate synthase and trehalose-6-phosphate phosphatase resp., have been isolated from Salmonella enterica serovar typhimurium and nucleotide-sequenced. Induction of trehalose biosynthesis by exposure of bacteria to high osmotic strength resulted in the intracellular accumulation of trehalose. An otsA mutant of S. enterica serovar typhimurium was more susceptible to killing by heat, and grew poorly under conditions of high osmolarity. The wild-type and otsA mutant strains showed similar abilities to colonize spleen tissues after oral dosing of mice. These findings suggest that the otsBA gene products play a role in environmental survival, but not in virulence, of S. enterica serovar typhimurium.
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 5
AN 2001:208403 HCAPLUS
DN 134:251193
TI Attenuated gut-colonising bacteria with enhanced guest antigen expression and their use as vaccines
IN **Titball, Richard William; Bullifent, Helen Lisa**
PA The Secretary of State for Defence, UK
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2001019974	A2	20010322	WO 2000-GB3402	20000906
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2382067	AA	20010322	CA 2000-2382067	20000906
EP 1210445	A2	20020605	EP 2000-958787	20000906

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL

	GB 2369618	A1	20020605	GB 2002-3213	20000906
	GB 2369618	B2	20040602		
	JP 2003509046	T2	20030311	JP 2001-523746	20000906
	AU 777298	B2	20041007	AU 2000-70206	20000906
PRAI	GB 1999-21275	A	19990910		
	GB 2000-17000	A	20000712		
	WO 2000-GB3402	W	20000906		

AB A method of enhancing expression of a desired protein at mucosal effector sites using promoters from ompC, phoP or pagC gene is described. Constructs used in the methods, as well as suitable recombinant gut-colonizing microorganisms such as a Salmonella spp. are also described and claimed. The invention is exemplified by transforming S. typhimurium SL3281 (aroA mutant) with plasmids encoding F1-antigen driven by one of above promoters to test mucosal antibody response to F1-antigen in mice. Such organisms are useful in the preparation of vaccines.

L4 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 6
AN 2001:315254 HCAPLUS
DN 135:1503
TI Tyrosine 331 and phenylalanine 334 in Clostridium perfringens α-toxin are essential for cytotoxic activity
AU Jepson, M.; **Bullifent, H. L.**; Crane, D.; Flores-Diaz, M.; Alape-Giron, A.; Jayasekeera, P.; Lingard, B.; Moss, D.; **Titball, R. W.**
CS CBD Porton Down, Defense Evaluation Research Agency, Salisbury, UK
SO FEBS Letters (2001), 495(3), 172-177
CODEN: FEBLAL; ISSN: 0014-5793
PB Elsevier Science B.V.
DT Journal
LA English
AB Differences in the biol. properties of the Clostridium perfringens phospholipase C (α-toxin) and the C. bifermentans phospholipase C (Cbp) have been attributed to differences in their carboxy-terminal domains. Three residues in the carboxy-terminal domain of α-toxin, which have been proposed to play a role in membrane recognition (D269, Y331, and F334), are not conserved in Cbp (Y, L, and I, resp.). The authors have characterized D269Y, Y331L and F334I variant forms of α-toxin. Variant D269Y had reduced phospholipase C activity towards aggregated egg yolk phospholipid but increased hemolytic and cytotoxic activity. Variants Y331L and F334I showed a reduction in phospholipase C, hemolytic, and cytotoxic activities, indicating that these substitutions contribute to the reduced hemolytic and cytotoxic activity of Cbp.
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 7
AN 2000:450261 HCAPLUS
DN 134:84796
TI Antibody responses to Yersinia pestis F1-antigen expressed in Salmonella typhimurium aroA from in vivo-inducible promoters
AU **Bullifent, Helen L.**; Griffin, Kate F.; Jones, Steven M.; Yates, Amanda; Harrington, Lesley; **Titball, Richard W.**
CS Defence Evaluation and Research Agency, Salisbury Wiltshire, SP4 0JQ, UK
SO Vaccine (2000), 18(24), 2668-2676
CODEN: VACCDE; ISSN: 0264-410X

PB Elsevier Science Ltd.
DT Journal
LA English
AB Attenuated mutants of Salmonella typhimurium are being evaluated as delivery systems for a variety of heterologous vaccine antigens. Gene promoters which are induced in vivo can direct the stable expression of genes encoding these antigens. We have investigated the utility of the phoP, ompC, pagC and lacZ gene promoters for expression of the Y. pestis F1-antigen in S. typhimurium SL3261 (aroA). After i.g. (intragastric) dosing the highest level of spleen colonization was found with recombinant Salmonella expressing F1-antigen from the phoP gene promoter, and this recombinant was most effective in inducing serum and mucosal antibody responses. The use of the pagC gene promoter to direct expression of F1-antigen resulted in the induction of serum and mucosal antibody responses even though the recombinant Salmonella were unable to colonize spleen tissues suggesting that colonization of these tissues is not essential for the induction of antibody responses.
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 8
AN 2001:23503 HCAPLUS
DN 135:179300
TI Stabilization of Salmonella vaccine vectors by the induction of trehalose biosynthesis
AU **Bullifent, H. L.**; Dhaliwal, K.; Howells, A. M.; Goan, K.; Griffin, K.; Lindsay, C. D.; Tunnacliffe, A.; **Titball, R. W.**
CS Defence Evaluation and Research Agency, CBD Porton Down, Salisbury, Wiltshire, SP4 0JQ, UK
SO Vaccine (2000), 19(9-10), 1239-1245
CODEN: VACCDE; ISSN: 0264-410X
PB Elsevier Science Ltd.
DT Journal
LA English
AB The growth of an aroA mutant of Salmonella typhimurium (SL3261) in minimal medium containing 0.5 M NaCl resulted in the intracellular accumulation of 2.2 μmol trehalose/mg total protein. The vacuum drying of these bacteria in the presence of trehalose allowed the recovery of 35% of the viable cells that were present before drying. In contrast, bacteria cultured in control medium accumulated 0.4 μmol trehalose/mg total protein and only 5% of the viable cells were recovered after vacuum drying with trehalose. Similar results were obtained when S. typhimurium SL3261, expressing the vaccine antigen (F1-antigen) of Yersinia pestis, was cultured in minimal medium with or without 0.5 M NaCl and dried in the presence of trehalose. Although these results indicate the potential for trehalose stabilization of vaccine strains of S. typhimurium, growth in minimal medium containing 0.5 M NaCl resulted in the loss of invasion competence of the bacteria.
RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 9
AN 1999:412211 HCAPLUS
DN 131:195644
TI Differences in the carboxy-terminal (putative phospholipid binding) domains of Clostridium perfringens and Clostridium bifermentans phospholipases C influence the hemolytic and lethal properties of these enzymes

AU Jepson, Marie; Howells, Angela; **Bullifent, Helen L.**; Bolgiano, Barbara; Crane, [illegible]; Miller, Julie; Holley, Jane; Jayasekera, Pramukh; **Titball, Richard W.**
CS Defence Evaluation and Research Agency, Salisbury, SP4 0JQ, UK
SO Infection and Immunity (1999), 67(7), 3297-3301
CODEN: INFIBR; ISSN: 0019-9567
PB American Society for Microbiology
DT Journal
LA English
AB The phospholipases C of C. perfringens (alpha-toxin) and C. bifermentans (Cbp) show >50% amino acid homol. but differ in their hemolytic and toxic properties. The authors report here the purification and characterization of alpha-toxin and Cbp. The phospholipase C activity of alpha-toxin and Cbp was similar when tested with phosphatidylcholine in egg yolk or in liposomes. However, the hemolytic activity of alpha-toxin was more than 100-fold that of Cbp. To investigate whether differences in the carboxy-terminal domains of these proteins were responsible for differences in the hemolytic and toxic properties, a hybrid protein (NbiCα) was constructed comprising the N domain of Cbp and the C domain of alpha-toxin. The hemolytic activity of NbiCα was 10-fold that of Cbp, and the hybrid enzyme was toxic. These results confirm that the C-terminal domain of these proteins confers different properties on the enzymically active N-terminal domain of these proteins.
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 10
AN 1997:176780 HCAPLUS
DN 126:196076
TI The level of expression of α-toxin by different strains of Clostridium perfringens is dependent on differences in promoter structure and genetic background
AU **Bullifent, Helen L.**; Moir, Anne; Awad, Milena M.; Scott, Paul T.; Rood, Julian I.; **Titball, Richard W.**
CS Defence Evaluation and Research Agency, CBD Porton Down, Wiltshire, SP40JQ, UK
SO Anaerobe (1996), 2(6), 365-371
CODEN: ANAEF8; ISSN: 1075-9964
PB Academic
DT Journal
LA English
AB The control of expression of the α-toxin gene (cpa or plc) of Clostridium perfringens has been studied in three strains shown to have high (NCTC8237), intermediate (strain 13) and low (NCTC8533) phospholipase C activity in the culture supernatant. The phospholipase C activity was shown to be related to cpa mRNA levels. Primer extension studies were performed to locate the cpa promoter regions in strains NCTC8237 and 13. Differences in promoter sequences could account for the differences in α-toxin production between strains 13 and NCTC8237. In contrast, the differences in α-toxin production between strains NCTC8237 and NCTC8533 were unlikely to be due to promoter differences because the upstream promoter-containing sequences were identical in these strains. The recombinant plasmid carrying the NCTC8237 cpa gene was introduced into strains 13 and NCTC8533. The level of production of the α-toxin was 16-fold higher in strain 13, indicating the presence of strain-dependant regulatory systems.

L4 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 12
AN 1995:778253 HCAPLUS
DN 123:307419
TI The construction of a reporter system and use for the investigation of Clostridium perfringens gene expression
AU **Bullifent, Helen L.**; Moir, Anne; **Titball, Richard W.**
CS Chemical and Biological Defence Establishment, Porton Down, Salisbury, SP4 0JQ, UK
SO FEMS Microbiology Letters (1995), 131(1), 99-105
CODEN: FMLED7; ISSN: 0378-1097
PB Elsevier
DT Journal
LA English
AB A reporter system was constructed to enable the study of gene expression in Clostridium perfringens. The system was based on plasmid shuttle vector pJIR410, which contained the C. perfringens erythromycin resistance gene. The vector was modified by the introduction of a DNA fragment comprising the open reading frame of the C. perfringens chloramphenicol acetyltransferase gene (catP) and flanking transcriptional terminators. The presence of a unique restriction site, engineered into the extreme 5' end of the open reading frame enabled a promoter region to be inserted to form an in-frame transcriptional fusion with catP. The system was tested by inserting the promoter region of the alpha-toxin gene of C. perfringens. The production of chloramphenicol acetyltransferase in C. perfringens was monitored during growth and the pattern of expression was shown to reflect levels of plc mRNA and alpha-toxin in the parent strain.

L4 ANSWER 12 OF 13 MEDLINE on STN DUPLICATE 11
AN 96146062 MEDLINE
DN PubMed ID: 8581165
TI Molecular variation between the alpha-toxins from the type strain (NCTC 8237) and clinical isolates of Clostridium perfringens associated with disease in man and animals.
AU Ginter A; Williamson E D; Dessy F; Coppe P; **Bullifent H**; Howells A; **Titball R W**
CS Division Immunologie Animale, Centre d'Economie Rurale, Marloie, Belgium.
SO Microbiology (Reading, England), (1996 Jan) 142 (Pt 1) 191-8.
Journal code: 9430468. ISSN: 1350-0872.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
OS GENBANK-L43545; GENBANK-L43546; GENBANK-L43547; GENBANK-L43548
EM 199603
ED Entered STN: 19960327
Last Updated on STN: 19990129
Entered Medline: 19960319
AB The alpha-toxin produced by the type strain of Clostridium perfringens (NCTC 8237) was shown to differ from the alpha-toxins produced by most strains of C. perfringens isolated from man and from calves with respect to reactivity with a neutralizing monoclonal antibody (DY2F5D11). The difference in antibody binding correlated with three differences in the deduced amino acid sequence (Ala174 to Asp174; Thr177 to Ala177; Ser335 to Pro335) of the alpha-toxins. Using octapeptides synthesized on the basis of the amino acid sequences from these regions of variability, it was shown that the Ala174 to Asp174 change had the greatest effect on reducing the binding of monoclonal antibody DY2F5D11 to the alpha-toxin. These

differences did not affect the enzymic or toxic properties of the protein. However, the phospholipase C activity of the alpha-toxin produced by strain NCTC 8237 was more susceptible to inactivation by chymotrypsin. The changes in amino acid sequence did not affect the ability of a C-terminal domain vaccine, derived from the alpha-toxin of strain NCTC 8237, to induce protection against the alpha-toxin from a bovine enteric strain of C. perfringens.

L4 ANSWER 13 OF 13 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1998:107160 BIOSIS
DN PREV199800107160
TI Immune responses to Yersinia pestis F1 antigen expressed in Salmonella typhimurium aroa from in vivo inducible promoters.
AU **Bullifent, H. L.**; Griffin, K. F.; Jones, S. M.; Williamson, E. D.; **Titball, R. W.**
CS C.B.D. Sector, D.E.R. A. Porton Down, Salisbury, Wilts SP4 0JQ, UK
SO Immunology, (Dec., 1997) Vol. 92, No. SUPPL. 1, pp. 54. print.
Meeting Info.: 5th Annual Congress of the British Society for Immunology. Brighton, England, UK. December 2-5, 1997. British Society for Immunology.
CODEN: IMMUAM. ISSN: 0019-2805.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 3 Mar 1998
Last Updated on STN: 3 Mar 1998